



10/019886

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

REC'D 25 JUL 2000

WIPO

PCT

PRIORITY DOCUMENT

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

Dated 12 July 2000

29 JUN 1999

RECEIVED BY POST

29JUN99 E457901-2 D01038
P01/7700 0.00 - 9915016.1

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road
Newport
Gwent NP9 1RH

9915016.1

1. Your reference
BD/SAC/21-230
2. Patent application number
(The Patent Office will fill in this part)
3. Full name, address and postcode of the or of each applicant (*underline all surnames*)

Patents ADP number (*if you know it*)

If the applicant is a corporate body, give the country/state of its incorporation

WILLIAM PRICE & SONS LIMITED
38 Raleigh Street,
Walsall,
West Midlands.
WS2 8RB

UK 0769009001
4. Title of the invention
A Method and Apparatus for use in Making Bread to Provide Marking on the Resulting Bread
5. Name of your agent (*if you have one*)

"Address for service" in the United Kingdom to which all correspondence should be sent (*including the postcode*)

Patents ADP number (*if you know it*)

WITHERS & ROGERS
Goldings House
2 Hays Lane
LONDON
SW1 2HW

00001776001 ✓
6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (*if you know it*) the or each application number

Country	Priority application number (<i>if you know it</i>)	Date of filing (<i>day / month / year</i>)
---------	--	---
7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing (<i>day / month / year</i>)
-------------------------------	---
8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (*Answer 'Yes' if:*
a) any applicant named in part 3 is not an inventor, or
b) there is an inventor who is not named as an applicant, or
c) any named applicant is a corporate body.
See note (d))
yes

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form.
Do not count copies of the same document

Continuation sheets of this form

Description

7

Claim(s)

-

Abstract

-

Drawing(s)

2

FR

10. If you are also filing any of the following, state how many against each item.

Priority documents

-

Translations of priority documents

-

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

-

Request for preliminary examination and search (Patents Form 9/77)

-

Request for substantive examination (Patents Form 10/77)

-

Any other documents (please specify)

-

11.

I/We request the grant of a patent on the basis of this application.

Signature

Withers & Rogers

Date

WITHERS & ROGERS

28/06/99

12. Name and daytime telephone number of person to contact in the United Kingdom

Mr. B.J.N. DEMPSTER - 01926 336111

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

DUPLICATE

**A METHOD AND APPARATUS FOR USE IN MAKING BREAD TO
PROVIDE MARKING ON THE RESULTING BREAD**

The invention relates to a method and apparatus for use in making bread to
5 provide marking on the resulting bread.

It is known to indent a word into the side of a baking tin in which dough is
baked to make bread so that the resulting bread has the word spelt out in
relief. It can be difficult to make out the word created in this way.

10

According to one aspect of the invention, there is provided a method for
use in making bread to provide marking on the resulting bread, the method
comprising the steps of depositing moisture on a surface of the dough for
the bread, depositing flour or the like on the said surface of the dough, one
15 or both of the flour or the like and the moisture being deposited in a
desired predetermined pattern so that flour is retained by moisture on the
dough in a predetermined pattern, and baking the dough.

In this way, a word, picture or other desired pattern can be produced on
20 the bread and the use of flour or the like results in a pale contrast with the
remainder of the loaf so that the word, picture or other pattern is readily
understood or recognised. Furthermore, even if the pattern is rubbed, as
the process results in the pattern being shallowly indented, flour tends to
remain at the edges of the pattern where there is an abrupt change in the
25 surface level so that the contrasting pattern is still clear in outline.

The term "flour or the like" is intended to include wheat flour as well as corn flour, starches and flour substitutes.

The moisture is preferably water or principally water. In another
5 embodiment the moisture is milk or a mixture of milk and water. In a further embodiment the moisture is a combination of egg and water and in a further embodiment the moisture is a solution of sugar or the like in water.

10 The method may include the step of proving the dough for the bread and the moisture may be deposited during proving for example as a result of raised humidity, or may be deposited after proving. The moisture may be deposited in any suitable manner and may be deposited by spraying.

15 Preferably the flour is deposited in a predetermined pattern. The flour or the like may be deposited on the dough in any desired manner and may be deposited through a stencil to achieve the predetermined pattern. Preferably, the stencil is arranged less than 3cm from the surface of the dough.

20

According to another aspect of the invention, there is provided apparatus for use in making bread to provide marking on the resulting bread, the apparatus comprising an oven, means defining a pathway to the oven, means on the pathway upstream of the oven for depositing moisture on a
25 surface of the dough for the bread, and means on the pathway between the moisture depositing means and the oven for depositing flour or the like on the said surface of the dough, one or both of the moisture depositing means and the flour depositing means being arranged to deposit in a

predetermined pattern so that flour is retained by moisture on the dough in a predetermined pattern.

The moisture depositing means may take any suitable form and may
5 comprise a proving box. In another embodiment, the moisture depositing means comprises means for spraying moisture onto the dough.

Preferably the flour depositing means is arranged to deposit in a predetermined pattern. The means to deposit the flour or the like may take
10 any suitable form and may include a stencil. The stencil is preferably arranged less than 3cm from the anticipated level of the surface of the dough. The flour depositing means may include vibration means. The vibration means is preferably arranged to vibrate substantially in the direction of intended deposition. This reduces any lack of definition in the
15 pattern due to the vibration.

The apparatus may include conveying means for conveying dough along the pathway, the conveying means defining the pathway. The conveying means may comprise a conveyor belt. The apparatus may include means to stop the movement of the dough along the pathway when the dough is
20 aligned with the means for depositing flour. Where conveying means is provided, the apparatus may include means to stop the conveying means when the dough is aligned with the means for depositing flour. The stopping means may include a sensor to sense the position of the dough and the sensor may include a photocell.

25

According to another aspect of the invention, there is provided a kit for use in making bread to provide marking on the resulting bread, the kit comprising means for depositing moisture on a surface of the dough for

the bread and means for depositing flour or the like on the said surface of the dough, one or both of the moisture depositing means and the flour depositing means being arranged to deposit in a predetermined pattern so that flour is retained by moisture in the dough, in a predetermined pattern.

5

An embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which:

Fig. 1 is a schematic plan view of the apparatus of the embodiment of
10 the invention;

Fig. 2 is a detail side elevation at A-A' of the apparatus of Fig. 1; and,

Fig. 3 is an end elevation in partial cross-section at B-B' of the apparatus of Fig. 1.

15 The apparatus 10 of the embodiment as shown in Fig. 1 includes a proving box 12 and a conveyor belt 14 to convey dough from the proving box 12 to an oven 16 in the direction of the arrow. There are two gantries 17, 19 spanning the conveyor belt 14. The first gantry 17, which is adjacent the proving box 12, supports a plurality of water spraying nozzles 18 over the
20 conveyor belt 14. The second gantry 19, which is adjacent the first gantry 17, supports a vibration hopper 20 shown in more detail in Fig. 2.

The vibration hopper 20 consists of an open topped hopper 22 to be agitated by a pneumatic ram 24 located on one side of the hopper 22 and
25 arranged to vibrate the hopper 22 in a substantially vertical direction. The hopper 22 consists of continuous side walls 26 which are angled slightly outwardly and a horizontal floor. The horizontal floor of the hopper 22 is formed of a stencil 28 which may for example include two groups of

apertures, each in a pattern to spell out the word "organic". The stencil 28 is preferably very accurately cut and may be laser cut from sheet metal which may be several millimetres thick. A sieve 30 is located above the stencil 28 and entirely covers the floor of the hopper 22. A powered
5 agitator 31 is provided above the sieve 30 to agitate flour in the hopper 22 to prevent compacting of the flour.

A photocell sensor 32 is supported on the vibration hopper gantry 19 to sense interruption of a horizontal light beam passing across the conveyor
10 belt 14.

In use, dough will be made up and put on trays 34. Pieces of dough 36 on the trays 34 will arrive in the proving box 12. After proving at raised humidity and temperature, each tray 34 is transported out of the proving
15 box 12 on the conveyor belt 14 to pass under the first gantry 17 which emits a continuous fine spray of water from the spraying nozzles 18 to leave a continuous uniform layer of water on the upper surface of the pieces of dough 36. The conveyor belt 14 continues to move until the leading edge of one of the pieces of dough 36 interrupts the light beam to
20 the photosensor 32. The photosensor 32 thus sends a signal to the motor (not shown) operating the conveyor belt 14 so that the motor stops the conveyor belt 14. In this position, two pieces of dough 36 on the tray 34 are aligned with the vibration hopper 22 underneath the stencil 28. Once the conveyor belt 14 has stopped, a signal is sent to the pneumatic cylinder
25 24 to vibrate the hopper 22 which results in flour passing through the sieve 30 and through the stencil 28 to be deposited on the moist upper surface of the two pieces of dough. Each piece of dough 36 thus receives flour in a pattern to spell the word "organic". The vertical distance X in

Fig. 2 between the top of the two pieces of dough 36 and the lower surface of the stencil 28 is controlled to be about 30mm. After the flour has been deposited, the vibration is stopped, the conveyor belt 14 is started again by its motor and the next two pieces of dough on a tray come forwards.

5

The dough is conveyed by the conveyor belt 14 into the oven 16 to be baked and the flour which has stuck to the moist surface of the dough is baked on. It thus forms a white or off-white pattern on the brown surface of the loaf which is clearly legible. The area of the surface of the dough where the flour is received will not rise as well as the dough around it and so there is a slight indentation under the flour. Thus, if the flour is rubbed off the marking will remain as an indentation. In any case, as the pattern is hard edged there tends to be a lip at the edges which acts to retain flour even if flour has been rubbed off elsewhere so that the pattern remains in outline at least.

15

In another embodiment, the humidity of the proving box 12 is so high that a continuous layer of moisture results and the first gantry 17 and water spraying nozzles 18 are not required.

20

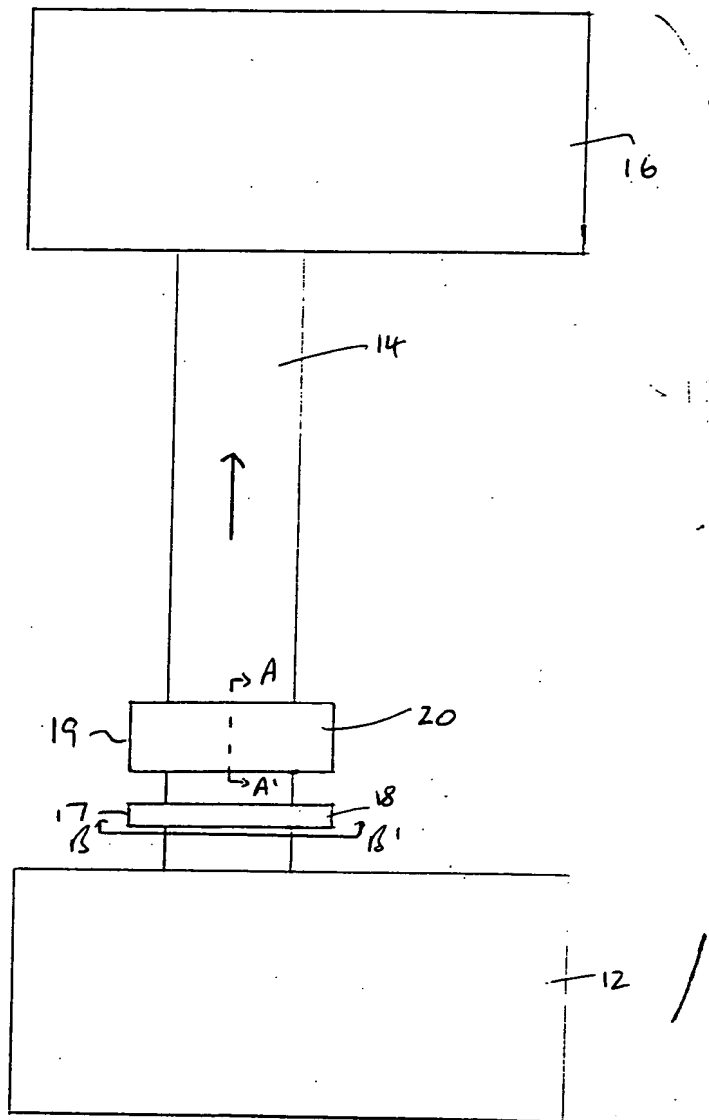
In a further embodiment, the water may be sprayed to cover only a narrow strip along the centre of each piece of dough 36 where the flour is to be deposited.

25 In another embodiment the water may be applied by contact with an absorbent body such as a brush or sponge.

The stencil 28 may spell any desired word or may define a picture or abstract design for example.

While an automated system has been described, the method could be
5 carried out under manual control.

FIG 1



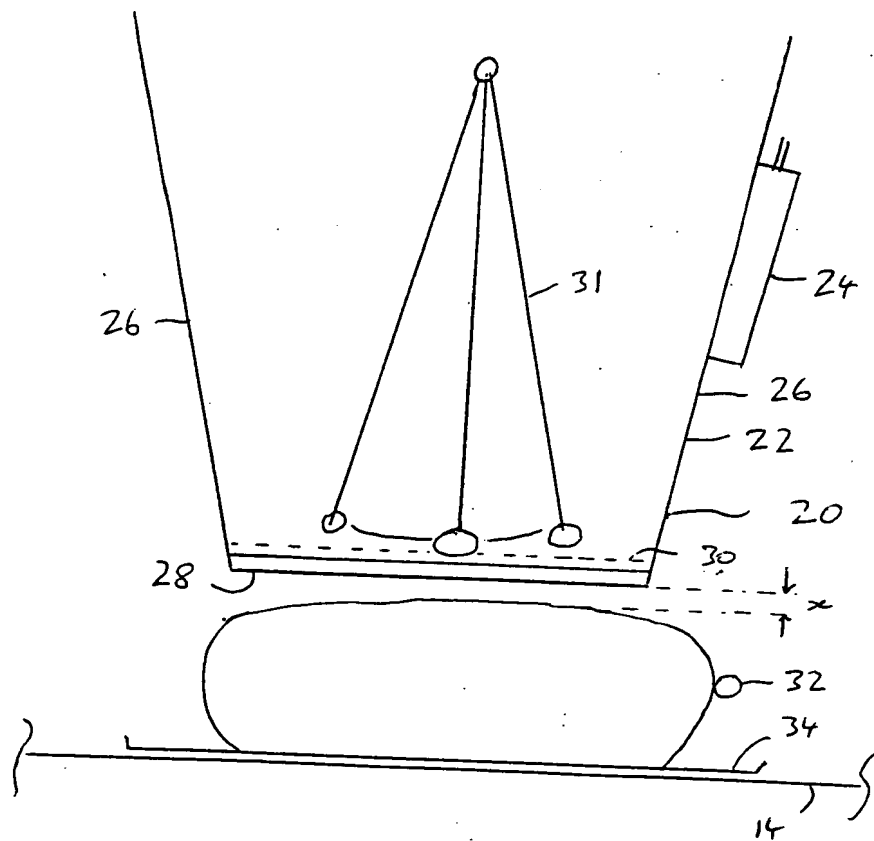


Fig. 2

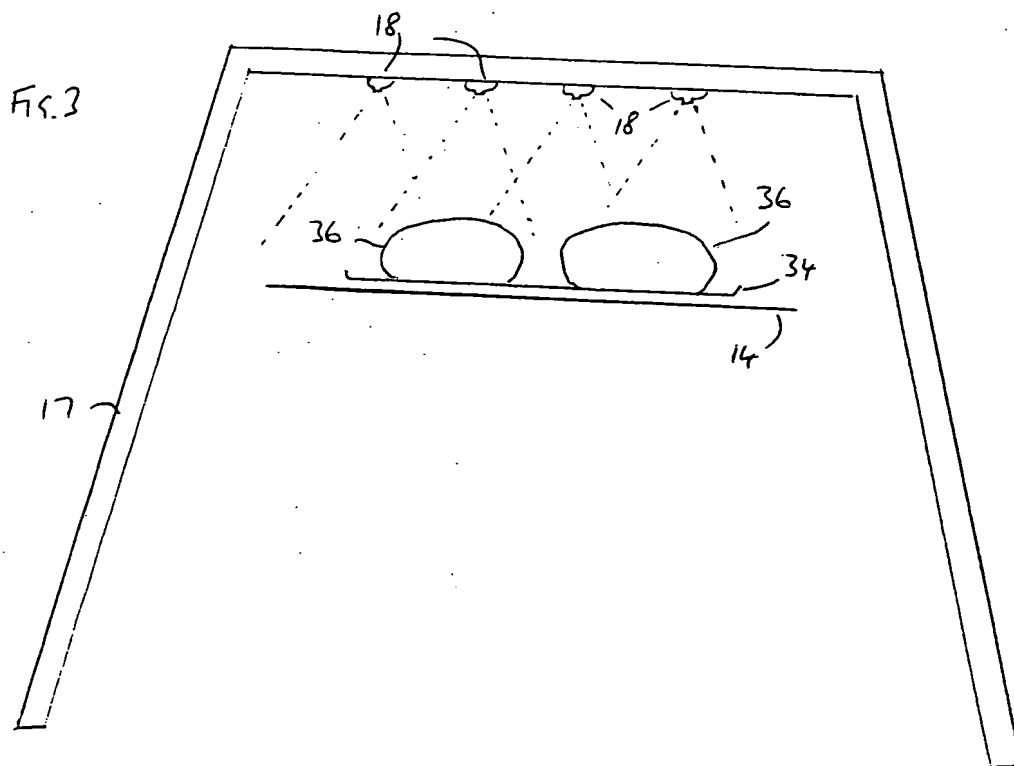


Fig. 3

PCT NO: GB00 / 02503

form 23/77 ! 29 6.00

Agent : Withers & Rogers